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ABSTRACT

A secondary analysis of data gathered by the International Communication Association (ICA) Communication Audit was used to test the hypothesis that the smaller the discrepancy between attitudes about current levels of information and the perceived ideal level of that information, the greater the organizational satisfaction. From 991 respondents surveyed during the 1977 audit of Wichita State University, data on information received and desired included the following categories among others: the boss, department meetings, coworkers in the unit, and the grapevine. Satisfaction data included, among others, relationships with other people in the unit, relationship with the boss, pay, and progress in the organization. The results suggested that the larger the discrepancy between information wanted and received, the less total organizational satisfaction perceived by the individual. Satisfaction also appears inversely related to the distance from the information source, a fact top management should take into consideration. The increased satisfaction provided by grapevine communication points up the unique nature of informal communication. Different techniques of measurement and a larger sample population may produce better results in the future. (JL)

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INFORMATION DISCREPANCY AS A PREDICTOR OF ORGANIZATIONAL SATISFACTION

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INFORMATION DISCREPANCY AS A PREDICTOR OF ORGANIZATIONAL SATISFACTION [1]

INTRODUCTION

This research concerns the analysis of data gathered from the administration of the ICA Communication Audit. Specifically, it deals with the survey instrument which measures the current information received and ideal levels of information desired. The difference between these levels is known as the "uncertainty index" (Goldhaber & Rogers, 1979). It purports to measure, and give an indicator of, information underload and overload for individuals within the organization. The focus of this research is directed at the following issue:

> What is the relationship between the discrepancy or current and ideal levels of information and organizational satisfaction?

The ICA Communication Audit

The ICA Communication Audit was developed by the Organizational Communication Division of the International Communication Association over a period of years. Its expressed intent is "to evaluate the organization's communication system, providing information and recommendations which should help an organization improve both its communication practices and its overall effectiveness as an organization" (Goldhaber & Rogers, 1979: 8). Included in the Audit are five measurement tools, which can be used together or independently. However, for the purposes of this research, we are limiting our discussion to the survey questionnaire.

The survey instrument measures respondent's attitudes and perceptions of current and ideal states of their communication system. Included in the measurement are "communication sources, messages, channels and receivers within the context of major interfaces... Major topics to be surveyed include concepts about information accessibility, information adequacy, communication satisfaction

and importance, communication content, communication relationships and communication outcomes" (Goldhaber & Rogers, 1979: 33-34).

Respondents are asked to note their attitudes and perception about these topics and levels of information on five-point Likert-type scales. The difference between their responses produces an index of "uncertainty"; the dimension of this value determines the probability of uncertainty as a function of information underload or overload. Also, upon analysis of individual respondent data, those organizational members designated as "outliers" (responses that are $\pm$ 1 standard deviation from the organizational norm) in terms of their uncertainty index rating can be called upon for further, in-depth interview. These interviews can help the Audit team better assess the nuances of the communicative dysfunction within that organization, by examining those organizational members not aligning with the "status quo".

THEORY

An extensive review of literature pertaining to the topics of information adequacy and satisfaction with communication experiences within the organization is beyond the scope of this paper. For a more comprehensive treatment of these topics, see Goldhaber, et al., (1978 a & b). However, there are a number of findings that are of particular importance to this research.

Goldhaber, et al., (1978b) found, through a preliminary overview of ICA Audit data, that employees generally desire more information about matters that relate to the overall work environment (with the exception of information from the immediate work environment). The findings from the accumulated data from the Audit would tend to substantiate this point; with the exception of information from the "grapevine", the mean ideal level of information is higher than the mean

current level (Goldhaber and Rogers, 1979). Further, Audit data also shows that the amount of information received is one of the best predictors of job satisfaction (Goldhaber, et al., 1978b).

Jablin (1980) points out that there is a distinction between the "objective" and "subjective" climates when researching this organizational phenomenon. Objective measures of the environment include memos, telephone calls, non-biased logging of communication (Jablin, 1980: 8). Subjective measures, on the other hand, "tap the perceptions of the participants (i.e., organizational members) about communication phenomena" (Jablin, 1980: 8). The ICA Audit survey questionnaire concerned itself with this "subjective" measurement.

Albrecht (1979) further develops the concept of subjective climate in her discussion of "key" communicators and their perceptions of their organizational interactions. These key communicators who fill the role of liaisons (organizational members who connect communication networks but are members of neither net) or bridges (any member of a particular net who has contact to one or more other groups) will have an influential effect on the communication system (Kaye, 1976; Taylor, 1977; Farace, et al., 1977). Consequently, Albrecht found that these key communicators, who have frequent and important contacts, will tend to perceive the climate more favorably than those who do not fill these organizational roles. This indicates that position in the informal and formal organization structure influences the individual's perception of satisfaction.

Employees generally want more information than they receive (Goldhaber, et al., 1978b). This does not necessarily mean that the information they presently receive is inadequate. An employee may be very "certain" about the information he or she receives, but this may not affect that person's need for more information. For example, a person involved in "career pathing", needs the extra information to fulfill that goal of upward mobility (Goldhaber, et al., 1978b).

"Discrepancy" then, is simply the difference between the amount of information one has and the subjective perceptions about the information one needs. Therefore, we suggest that the term "uncertainty" used by Goldhaber and Rogers (1979) to describe this discrepancy is a misnomer. The term "information discrepancy" is a more appropriate term that more accurately describes this phenomenon and will be used throughout this paper.

The amount of information a member of an organization receives has been linked to the level of satisfaction he or she experiences within that organization (Goldhaber, et al., 1978b). Hence, the difference between the current level of information and the perceived ideal level of information (as assessed by the information discrepancy index) will determine the extent to which the individual is satisfied with that experience. One's satisfaction with the organization, job or communication relationships is defined as "organizational outcomes" in the ICA Audit survey instrument (Goldhaber & Rogers, 1979).

Based on the above discussion, the following theoretical hypothesis is justified:

> H_I: The smaller the discrepancy between attitudes about current levels of information and the perceived ideal level of that information, the greater the organizational satisfaction.

METHODS

In order to test the theoretical hypothesis, a secondary analysis was performed using data gathered from the ICA Organizational Communication Audit Data Bank. The data analyzed was gathered in the 1977 audit of Wichita State University. Preliminary results have been reported elsewhere (Goldhaber &

Richetto, 1977).

During the audit, the research team attempted to measure the entire population of this university. Due to the nature of the measurement instruments of the ICA Audit, it was necessary to attempt a census of organizational members (Lesniak, 1981). The 991 survey responses were obtained from 1303 respondents yielding a return rate of 76%.

The ICA Audit measured the quantity of information received and desired in the ideal case from the following sources: your boss, department meetings, individuals in other units in your organization, management presentations, co-workers in your unit, the grapevine, boss's superior, top management and subordinates. According to the ICA audit, the inter-item reliability for the nine current items, using Crombach's α, was .699. The reliability for the ideal items was .756 (Goldhaber & Rogers, 1979: 34).

The following items measured satisfaction with organizational outcomes in the ICA Audit; your relationship with the people in your unit, your relationship with your boss, your job, your organization as compared with other organizations that you know, your pay, your progress in this organization up to this point, your opportunities for getting ahead in your organization, your organization's attempts to keep you informed, your organization's overall communication efforts, your opportunities to make a difference in your organization, your organization's concern for employee's welfare. According to the ICA Audit, the inter-item reliability for the outcome items was .876.

METHODS

This study attempted to derive the variables by using a maximum likelihood factor analysis technique (JFACTOR). This technique was performed on both sets

of indicators (discrepancy and outcomes). Maximum likelihood factor analysis is similar to all other forms of factor analysis differing only in the minimization procedure. Rather than determine the least squares best fit of the factors, it uses a log-likelihood function of determining deviance from factors. Because this was an exploratory analysis, and the hypothesis was not yet defined, there was no need to set restrictions on the parameters of the solutions. It should be noted that because the solution is unrestricted, the commmnality and uniqueness values would not be the same as if a confirmatory analysis with parameters reflecting the hypothesis were used (Jöreskog & Sörbom, 1979).

There are three reasons for using a maximum likelihood factor analysis rather than the least squares best fit method: one, in cases where extreme scores are encountered; two, when different measurement scales are encountered; and three, when a lower standard error is desired. Because the ICA Audit used a five-point Likert-type scale consistantly on the above two sets of indicators, the first two criteria were not important. However, a low standard error was desirable and for this reason maximum likelihood factor analysis was used.

A maximum likelihood factor analysis was performed with the outcome indicators (satisfaction). The dependent variable, satisfaction, was derived by indexing the 11 original ICA Audit variables of organizational outcomes. The factor analysis resulted in a unifactor solution explaining 49.8% of the variance. This was determined through the use of a Scree test (Barnett & Woelfel, 1979). The factor analysis is summarized in Table 1. The index was formed by multiplying each of the factor scores by the corresponding variables and then summing them together.

TABLE 1 ABOUT HERE

The independent variable, information discrepancy, was calculated as the

difference between information wanted and information received from the nine sources gathered in the Audit. When maximum likelihood factor analysis was performed on these different scores, there was no clear factor solution. The first factor explained only 23.8% of the total variance. Communalities showed little discrepancy, ranging from .32 to .51, except for .006 for grapevine and top management which showed an excessively high value at .999. This indicated an unequal distribution of variance, therefore no single factor solution could be derived.

TABLE 2 ABOUT HERE

Because of the uniqueness of the indication of information discrepancy, they were treated as unique variables. As a result, a multiple regression analysis was used to test the hypothesis, retaining the nine source indicators as independent variables and organizational satisfaction as the dependent variable. Due to the large sample size (n=839), a stringent level of significance was used ($p = .005$). Since directionality was specified by the theory, a one-tailed value was used.

RESULTS

The means and standard deviations of all variables, the nine independent information discrepancies and the dependent maximum likelihood factor index of organizational satisfaction, are presented in Table 3. The distributions about the mean are within acceptable limits and standard deviations are all nearly one. This is sufficient variance to test the hypothesis.

TABLE 3 ABOUT HERE

The matrix of the correlations among the variables is displayed in Table 4. It indicates that all the independent variables are significantly related to the dependent variable, organizational satisfaction. It should be noted that with an N of 839, an $F = 3.27$, $p = .005$ can be achieved with a correlation of only .07. The positive correlation found in Table 4 for grapevine source will be discussed later in the paper. Further, the correlations among the independent variables indicate that they are not independent. For this reason analysis of the theoretical model was performed by a multiple regression analysis in order to partial out the effects of each variable on the other.

TABLE 4 ABOUT HERE

The results from the multiple regression show the β-weights in Figure 1. Together, the nine information discrepancies produce a multiple correlation of .493. That is 24.3% of the variance in organizational satisfaction is

accounted for by information discrepancy.

FIGURE 1 ABOUT HERE

Five of the independent variables (information discrepancies) displayed significant B-weights at the .005 level. These are rank ordered as follows:

1)	Top Management	= .21
2)	Departmental Meetings	= .12
3)	Formal Management Presentations	= .12
4)	Superior of Supervisor	= .09
5)	Grapevine	=-.16

Thus, the results of the regression analysis support the hypothesis for the five significant variables. The positive correlation for the grapevine is discussed in more detail below. At this time it can be said that according to absolute values, all five variables have the predicted affect.

DISCUSSION

The results suggest that the larger the discrepancy between information wanted and information received, the less total organizational satisfaction perceived by the individual. This relationship held for all nine source discrepancies. All zero-order correlations were significant ($p \leq .005$). All nine source discrepancies were found to be differentiated through factor analysis of source discrepancy variables. However, when the unique effects of the variables were examined using multiple regression procedures only five of the nine relationships remained significant. They were: top management, departmental meetings, formal management presentations, superior of supervisor,

and the grapevine.

Additionally, four of the five significant discrepancy variables seem to support the distance direction theory outlined by Wiio (1974; Goldhaber, et al., 1979) that the further away the source of information is from the individual, the less the perceived satisfaction. Information discrepancy relating to top management, department meetings, formal management presentations and supervisor's superior had a greater impact on organizational satisfaction than information discrepancies relating to immediate supervisor, people in other units, co-workers, and subordinates. This suggests that top level management should communicate to a greater degree with members of the organization.

The positive relationship between the grapevine and satisfaction can be attributed to the unique nature of informal communication. Goldhaber and Rogers (1979) suggest that the discrepancy be treated as an absolute value to indicate magnitude, not directionality. However, this result suggests that the informal information structure produces more information than organizational members wish to receive, and hence have a positive relationship with satisfaction.

Problems/Implications for Further Research

One of the problems encountered during this research was the lack of precision of measurement because of the type of scaling used. The five-point Likert type scales used in the ICA Audit have been criticized by Barnett et al., (1981), "these scales discriminate only five different values, [therefore] they build 20% error into the measurement process... They are incapable of greater than 80% accuracy." Overall reliability of the measurement of the ICA Audit has been determined at .70 to .85 (Goldhaber and Rogers, 1979). Even though the

ICA instrument has been found to contain only 1% relative error (Barnett, personal correspondence), the Audit can only explain 50-60% of the variance.

One possible method of scaling that could be used to better measure the variables is the direct magnitude estimate form of fractionation scales. Some of the advantages to this type of scaling are that it provides for more variance of responses, it is a more reliable measurement tool, and it provides a lower error term. For a more detailed treatment of the use of fractionation scales in communication audits, see Barnett et al., (1981).

A second problem with this research concerns the sample population used for the data analysis. The generalizability of research findings based on data from one large Midwestern University to other organizational structures is somewhat limited. An intertypical sampling strategy would be a more useful approach to assure greater generalizability (Kimberly, 1976; Kapp & Barnett, 1981). The intertypical strategy samples organizations over a range of sizes, types, ages, and environments. To further any sort of theory building, it would be more desirable to have data come from a representative heterogeneous sample. However, it is possible that similar results may not be found in other organizational settings. Contingency theory suggests that environmental influences will vary the nature of the communication and the structure of the networks (Lawrence & Lorsch, 1967; Galbraith, 1977; Goldhaber, et al., 1979). Only further analysis of already existing ICA data and future audits will show the extent to which the intertypical sample strategy would be effective.

Future research will examine the combined effects of other variables on satisfaction. Information sent variables can be indexed as discrepencies in the same way as the information received variables were for this study.

Since only 23% of the variance was explained by this study (even with only 50 to 60% possible), other factors may exist which have a direct effect on satisfaction. Further analysis of the ICA data, preferably across organizational types, may account for more of the variance.

SUMMARY

This study examined the relationship between information discrepancy (information wanted - information received) from nine organizational sources and organizational satisfaction. This secondary analysis used a large Midwestern data from the ICA Audit Data Bank. Information "uncertainty" was reconceptualized as "information discrepancy", forming nine discrepancy variables. Organizational satisfaction was operationalized as the maximum likelihood factor analysis index of eleven organizational outcome variables. A multiple regression analysis was performed with satisfaction and each of the derived information discrepancy variables: (immediate supervisor, department meetings, people in other units, formal management presentations, co-workers, grapevine, supervisor's superior, top management, and subordinates and the satisfaction index). The results supported the hypothesis that the smaller the information discrepancy, the greater the organizational satisfaction (R^2 = .24). It was further shown that sources higher up the organizational structure and grapevine have the most impact on organizational satisfaction, while those sources closer to the receiver do not affect satisfaction significantly.

NOTES

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TABLE 1

MAXIMUM LIKELIHOOD FACTOR ANALYSIS:

ORGANIZATIONAL SATISFACTION

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	5.4733	49.8	49.8
2	1.0728	9.8	59.5
3	.9708	8.8	68.3
4	.6413	5.8	74.2
5	.5632	5.1	79.3
6	.5388	4.9	84.2
7	.4240	3.9	88.0
8	.3998	3.6	91.7
9	.3669	3.3	95.0
10	.3529	3.2	98.2
11	.1958	1.8	100.0

VARIABLE	COMMUNALITY	FACTOR SCORES
Your relationships with people in your unit	.3226	.4731
Your relationship with your boss	.3367	.5467
Your job	.4185	.5763
Your organization, as compared with others which you know	.4910	.6501
Your pay	.3057	.4440
Your progress in your organization up to this point	.4931	.6297
Your opportunities for getting ahead in your organization	.5013	.6353
Your organization's attempts to keep you informed	.6906	.8536
Your organization's overall communication efforts	.6856	.8662
Your opportunity to make a difference in your organization	.5356	.7486
Your organization's concern for employees' welfare	.5465	.7564

TABLE 2

MAXIMUM LIKELIHOOD FACTOR ANALYSIS:

INFORMATION DISCREPANCIES

VARIABLE	COMMUNALITY
Immediate Supervisor	.36631
Department Meetings	.50635
People in Other Units	.46288
Formal Management Presentations	.38727
Co-workers	.31929
Grapevine	.00600
Supervisor's Superior	.46856
Top Management	.99900
Subordinates	.15180

FACTOR	VAR. COMP.	PCT. OF VAR.	CUM. PCT.
1	2.14108	23.8	23.8
2	1.52638	17.0	40.7

TABLE 3

MEANS AND STANDARD DEVIATIONS OF ALL VARIABLES

VARIABLE	MEAN	STANDARD DEV
Immediate Supervisor	.3187	1.1322
Department Meetings	.4547	1.1257
People in Other Units	.3251	.9260
Formal Management Presentations	.4356	1.0599
Co-Workers	.2061	.9087
Grapevine	-.1608	.9941
Supervisor's Superior	.4511	1.0949
Top Management	.5453	1.1494
Subordinates	.1388	.7007
Satisfaction Index	37.8433	20.4989

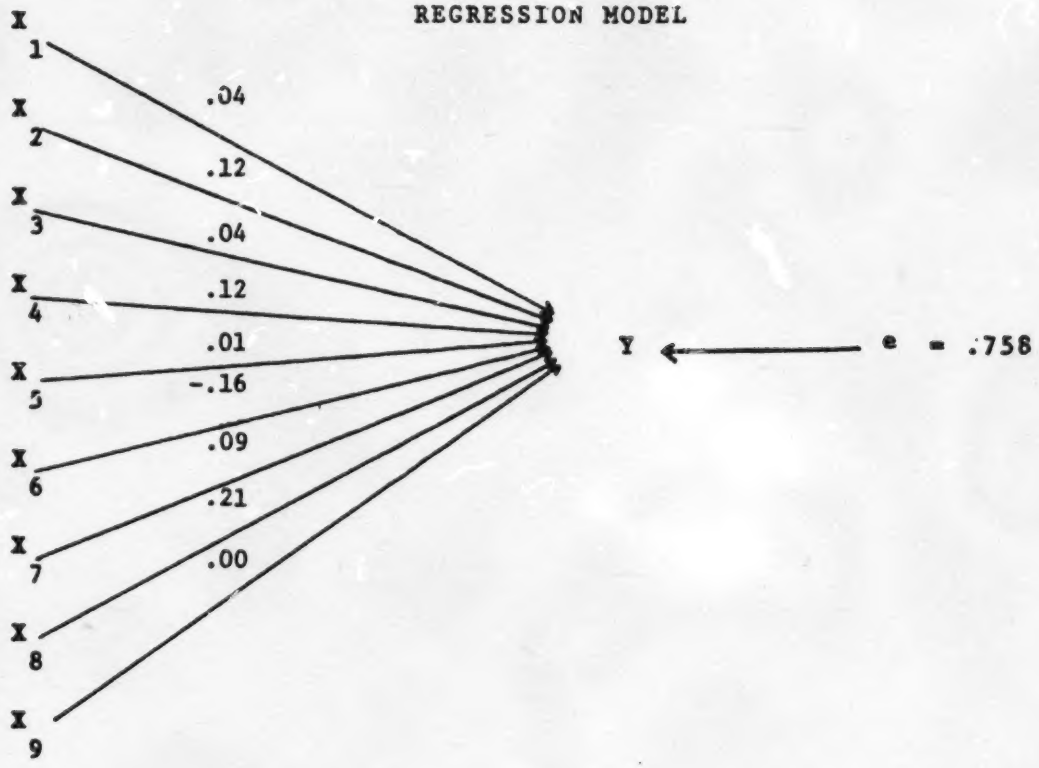
TABLE 4

CORRELATIONS AMONG VARIABLES

Department Meetings	.45898								
People in Other Units	.38313	.45982							
Formal Management Presentations	.34669	.44986	.44633						
Co-workers	.33568	.37461	.44087	.30116					
Grapevine	.00462	-.03913	.08145	.03287	.17165				
Supervisor's Superior	.38419	.41937	.40259	.41865	.33531	.05431			
Top Management	.30042	.37240	.41665	.43260	.29335	.06809	.59953		
Subordinates	.18004	.29549	.25810	.20768	.22441	.08903	.24902	.30985	
Satisfaction	-.25840	-.34306	-.28185	-.33594	-.19104	.13680	-.34861	-.38586	-.15595
	Immed. Supervsr	Dept. Meet.	People Other Units	Formal Mgt. Present.	Co-Work.	Grape-Vine	Supervsr. Superior	Top Mgt.	Subordinates

FIGURE 1

REGRESSION MODEL



X_1 = Immediate Supervisor

X_2 = Department Meetings

X_3 = People in Other Units

X_4 = Formal Management Presentations

X_5 = Co-Workers

X_6 = Grapevine

X_7 = Supervisor's Superios

X_8 = Top Management

X_9 = Subordinates

Y = (See correlation matrix (Table 4) for the relationships among the exogenous variables)